SYSOYEV, F. F.

"Sulfamidine and Lead Compound Medication for Trachoma and the Comparative Value of These Two Methods," Vest. Oftalmol., 28, No. 6, 1949. Cand. Medical Sci. Mbr., Chair Eye Diseases, Izhev State Med. Inst., -c1949-.

SYSOYEV, F.F., dotsent; BURDELOVA, F.S.; KALUGINA, V.Ya.

Control of trachoma in the Udmurt A.S.S.R. Vest.oft.33 no.2:3-9 Mr-Ap '54. (MLRA 7:2)

1. Iz kliniki glaznykh bolezney Izhevskogo meditsinskogo instituta i respublikanskogo trakhomatoznogo dispansera.
(Udmurt A.S.S.R.--Conjunctivitis, Granular)
(Conjunctivitis, Granular--Udmurt A.S.S.R.)

SYSOYEV, F.F., dotsent; BERDNIKOVA, F.S.; MIROSHKINA, K.M.

Synthomycin therapy of trachoma. Vest.oft.34 no.4:3-5 Jl-Ag '55.
(MLRA 8:10)

1. Iz kliniki glaznykh bolezney Izhevskogo meditsinskogo instituta i Respublikanskogo trakhomatoznogo dispansera.
(TRACHOMA, therapy,
chloramphenicol, statist.analysis)
(CHLORAMPHENICOL, therapeutic use,
trachoma, statist. analysis)

SYSOYEV, F.F., dotsent

Prowazek's bodies in trachoma and their epidemiological significance. Vest.oft. 69 no.2:3-9 Mr-Ap '56. (MLRA 9:7)

1. Zaveduyushchiy klinikoy glaznykh bolezney Izhevskogo meditsinskogo instituta.
(TRACHOMA, epidemiol.
Prowazek's bodies, review)

EXCERPTA MEDICA Sec.13 Vol.4/5 Pub.Health, Etc. May 58

SYSOYEV, F

1678. CURRENT PROBLEMS OF COMBATING TRACHOMA (Russian text) - Sysoyev F. - VESTN. OFTAL. 1957, 2 (6-15) Tables 4

This is a lengthy article and a serious approach to the problem of trachoma in the Udmurt Region (Ural Mountains) where about 50% of the population was affected with trachoma, with blindness resulting in 4,000 people in 1925-1930. According to the date of 1950, there was only 7.6% of the rural population suffering from trachoma, and by 1956 about 92.2% of the population was cured from trachoma. The author, however, puts up practical questions as to which of the cases could be considered 'cured' from trachoma. The author studied 1,000 cases of trachoma 4, and the recurrence of the disease. His opinion is that any recurrence of trachoma is an indication that the cure was not complete or the cases were not treated for a sufficient period of time. The average of recurrences in this region was 8.3%; 26.3% of the group of the trachoma 4 were being treated for prevention of the recurrence. In this group there were found isolated reddish islands of infiltrates deep in the tarsus which the author named 'islands in the scars', others were located superficially, covered with epithelium, which he calls 'islands outside of the scar tissue'. This latter group constituted 17.3% and was subject to recurrences. It occurred mostly in the older age group who did not attend the clinics regularly. The group with the buried red islands could belong to trachoma 4, although they could flare up occasionally under the influence of external irritation or when the defence mechanism of the organism was lowered. The author, therefore, concludes that the practical criterion of the cure of trachoma is an important one and needs further study and measures of observation of the trachoma patients.

Sitchevska - New York, N.Y. (XII, 17)

SYSOYEV, F.; KUDOYAROV, G.

First All-China Conference on the Control of Trachoma. Vest.oft. 72 no.2:52-55 Mr-Ap '59. (MIRA 12:4)
(HARBIN, CHINA--CONJUNCTIVITIS, GRANULAR--CONGRESSES)

SYSOYEV, F.I., gornyy inzhener; ZHAROV, N.I., gornyy inzhener; GOTOVTSEV, Yu.A., gornyy inzhener.

Practice of operating SKR-11 scraper conveyers with higher chain speeds. Vop. rud. transp. no.2:27-29 1857. (MIRA 14:4)

1. Shakhta No. 40 "Kurakhovka" (for Zharov). 2. Dnepropetrovskiy gornyy institut (for Gotovtsev).
(Conveying machinery—Testing)

ADAMYAN, A.; SYSOYEV, G.

Stalingrad's first experience. Na stroi. Ros. no.3:25 D '60.
(MIRA 14:6)

1. Glavnyy inzh. Stalingradskogo kombinata silikatnykh stroitel'nykh materialov (for Adamyan). 2. Glavnyy inzh. otdela tipovogo proyektirovaniya Stalingradproyekta (for Sysoyev).
(Silicates)
(Stalingrad--Building materials)

PA 62T18

SYSOYEV, G.

Feb 1948

USSR/Engineering
Plastics

"Restoration of Parts With Plastics," G. Sysoyev, Dir, Accumulator Stations, 1/8 p

"Avto" No 2

Saratov Repair and Charging Station for Batteries has organized section which will use plastics to repair battery cases, and other parts manufactured out of plastics, ebonite, or glass. This will be accomplished with the aid of glue developed by Professor I. Nazarov Laureate of the Stalin Prize. Workers of this plant have also organized facilities for repair of household articles made of plastics, glass, ebonite or porcelain.

62T18

USSR/Engineering (Contd) Feb 1948

thus rendering great service to the populace of Saratov.

62T18

KOTEL'NIKOV, N.V.; ANDREYEV, F.G.; MATYASHA, R.N.; SYSOYEV, G.N.; DEKAMILLI, G.M.

Large panels made of reinforced expanded clay concrete [Suggested by N.V. Kotel'nikov and others]. Rats. i izobr. predl. v stroit. no.6:7-11 '58. (MIRA 11:10)
(Concrete slabs) (Ceilings)

SYSOYEV, I.

Gums and Resins

Rosin fixing-agent. Mol. prom. 13 No. 9, 1952.

9. Monthly List of Russian Accessions, Library of Congress, December 1952, UNCL.

SYSOYEV, I. I.

"Anti-epidemic action among the civic population in the period of offensive operations," Trudy Krymsk. med. in-ta im. Stalina, Vol. VII, 1948, p. 123-25

SO: U-3950, 16 June 53, (Letopis, 'Zhurnal 'nykh Statey, No. 5, 1949).

SYSOYEV, I.I.

Fulfillment of certain items in the order no. 870 of the Ministry of Public Health of USSR. Sovet zdravookhr. 11 no. 3:43-44 May-June 1952. (CLML 22:4)

1. Docent. 2. Of the Department of Public Health Organization (Head -- Docent I. I. Sysoyev), Crimean Medical Institute imeni I. V. Stalin.

SYSOYEV, I.I., Doc Med Sci -- (diss) "Medical and sanitary service for workers ~~in the~~ fishing industry and fisherman-kolkhoz workers of Krymskiy Rayon in the Azov-Black Sea basin." Kazan', 1959, 37 pp (Kazan' State Med Inst) (KL, 36-59, 116)

SYSOYEV, I.N.

For present and future plants. Za indus.Riaz. no.2:40-42 D '61.
(MIRA 16:10)

1. Zamestitel' glavnogo konstruktora Ryazanskogo stankostroitel'nogo zavoda.

SYSOYEV, I.N.; YAKOVENKO, V.A.; ZASLAVSKIY, M.Z.

Electromechanical copying system for lathes. Stan. i instr. 36 no.8:4-7 Ag '65. (MIRA 18:9)

SYSOYEV, Konstantin Alekseyevich; CHELYSHKIN, Yu.G., red.

[Fundamentals of surveying] Osnovy geodezii. Moskva, Kolos, 1965. 159 p. (MIRA 18:7)

Sysoyev L.A.

USSR / Electricity G

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9626

Author : Urazovskiy, S.S., Sysoyev, L.A.
Inst : Not given
Title : Variation of the Temperature Coefficient of the Dielectric Constant of Polymorphous Substances in the Liquid State.

Orig Pub : Tr. Kharkovsk. Politekhn. in-ta, 1956, 8, 43-47

Abstract : The dielectric constant was determined by measuring the capacity of the capacitor (C_X), filled with the investigated liquid. The electronic portion consists of two high-grade oscillators and operates by the beat method. The frequencies were compared on an oscillograph. The measuring capacitor was made in the form of three coaxial platinum cylinders, placed in a glass bulb with a water jacket. The external and internal cylinders were one pole and the center one the other pole. The temperature was measured with the aid of a diffe-

Card : 1/2

L 43575-65 EWG(j)/EWT(l)/EWT(m)/EWP(e)/EPF(c)/EWP(t)/EPR/T/EEC(b)-2/EWP(b)
Pr-4/Ps-4/Pt-4 IJP(c) WW/GG/WH
ACCESSION NR: AT5009569 Z/0000/62/000/000/0021/0024

AUTHOR: Bakradze, R. V.; Dolgopolova, A. V.; Kraynyukov, N. I.; Sysoyev, L. A.

TITLE: Crystallization of compounds of the type A(II) B(VI)

SOURCE: Konference o monokrystalech. 4th, Turnov, 1961. Sbornik referatov. Turnov, VUM, 1962, 21-24

TOPIC TAGS: single crystal cultivation, cadmium sulfide crystal, cadmium selenide crystal, sublimation, directed solidification, dislocation density, crystal electrical conductivity, crystal photosensitivity

ABSTRACT: After reviewing the methods of preparation of single crystals of $A^{II}B^{VI}$ compounds reported in the literature, the authors describe the techniques they employed in growing single crystals of cadmium sulfide by sublimation and single crystals of cadmium sulfide and selenide from melts. The cadmium sulfide crystals were grown at 800-1150C in a quartz tube; they were in the form of hexagonal prisms (800-1150C) and rectangular plates (850-950C). The cadmium sulfide and selenide crystals were grown in a graphite container at 1800C and under 200 atm of argon, directed solidification being used; cylindrical ingots were thus obtained. The dislocation density of cadmium sulfide

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L 43575-65
ACCESSION NR: AT5009569

was found to be 10^5 cm^{-2}. The electrical conductivity and photosensitivity of all three types of crystals were measured. Orig. art. has: 9 figures.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut monokristallov Khar'kov (All-Union Scientific Research Institute of Single Crystals)

SUBMITTED: 00 ENCL: 00 SUB CODE: SS

NO REF SOV: 004 OTHER: 013

Card 2/2

24,2600

36484

S/181/62/004/003/036/045
B108/B104

AUTHORS: Sysoyev, L. A., and Kraynyukov, N. I.

TITLE: Preparation of photosensitive cadmium sulfide crystals from a melt under inert-gas pressure

PERIODICAL: Fizika tverdogo tela, v. 4, no. 3, 1962, 807-809

TEXT: Preparation of cadmium sulfide crystals is hampered by technical difficulties owing to the aggressivity of its vapor. The Fig. shows a device for growing CdS crystals from a melt under 200 atm of argon. The specimens obtained had a diameter of 12 and a height of 10 - 25 mm. Their dark resistivity was 0.03 - 0.04 ohm·cm without photosensitivity. In a few specimens, dark resistivity was even $6.0 \cdot 10^9$ ohm·cm with slight photosensitivity. The low dark resistivity is probably due to the enrichment in cadmium over the stoichiometric ratio. In order to increase photosensitivity the crystals were annealed in various atmospheres which increased the dark resistivity up to 10^{11} ohm·cm and photosensitivity to $\alpha = 5.0 \cdot 10^6$. $\alpha = (\rho_d - \rho^*_{ill})/\rho_{ill}$, ρ_d is the dark photosensitivity, ρ_{ill}

Card 1/2

the photosensitivity at an illumination of 10^4 lux. There are 1 figure, 1 table, and 8 references: 2 Soviet and 6 non-Soviet. The four most recent references to English-language publications read as follows: R. Frerichs. Phys. Rev., 72, 594, 1947; L. C. Greene et al. J. Chem. Phys., 29, 1375, 1958; W. E. Medcalf, R. H. Fahring. J. Electrochem. Soc., 105, 719, 1958; A. Addamiano. J. Phys. Chem., 61, 1253, 1957.

SUBMITTED: November 19, 1961

Legend to the Fig.: (1) Autoclave, (2) argon cylinder, (3) conductor, (4) reducing valve with thermocouple terminals, (5) ЭПД-12 (EPD-12) electronic potentiometer, (6) РНО-250-10 (RNO-250-10) transformer, (7) ОСУ-20/6 (OSU-20/6) transformer.

BIDNAYA, D.S.; OBUKHOVSKIY, Ya.A.; SYSOYEV, L.A.

Developing new methods for CdS crystal growing from solutions.
Zhur.neorg.khim. 7 no.12:2671-2673 D '62. (MIRA 16:2)
(Cadmium sulfide crystals)

SYSOYEV, L. A.; KRAYNYUKOV, N. I.; SKOROBOGATOV, B. S.; SAZONOVA, S. A.

Luminescence of zinc sulfide single crystals grown from a melt. Opt. i spektr. 13 no.6:859-861 D '62.
(MIRA 16:1)

(Zinc sulfide crystals—Growth)
(Zinc sulfide—Spectra)

SYSOYEV, L. A.; BAKRADZE, R. V.

"Structure and Crystal Growth of CDS."

Report presented at the Sixth Congress of the International Union of Crystallography, Rome, Italy, 9-18 Sept 63.

ACCESSION NR: AT4040563 S/2564/64/004/000/0157/0159

AUTHOR: Ry*nayev, L. A.; Obukhovskiy, Ya. A.; Bidnaya, D. B.

TITLE: Crystallization of cadmium sulfide from solutions of cadmium halides

SOURCE: AN SSSR. Institut kristallografii. Rost kristallov, v. 4, 1964, 157-159

TOPIC TAGS: cadmium sulfide, cadmium halide, cadmium sulfide crystallization, cadmium halide eutectic

ABSTRACT: The observation that molten $CdCl_2$ dissolves ~30 wt. % of CdS at 800C was used by the authors as the basis for a study of the conditions for obtaining large and well-shaped crystals of CdS. Crystals 1.5 mm thick and 4 mm in diameter, with well-developed faces, were obtained from a $CdCl_2$-CdI_2 eutectic mixture (30% $CdCl_2$ - 70% CdI_2) which melts at 359C. The process was carried out in a resistance oven with programmed temperature reduction. A mixture of 8 wt. % CdS and 92 wt. % of the eutectic was heated at 670-680C for 3-4 hrs in a quartz ampule and cooled at rates of 50, 20 or 5 degrees/hr. A slower rate contributed to increased size and regular shape of the crystals. Orig. art. has: 3 figures.

Card 1/2

A L 11879-66 EWT(1)/EWP(e)/EWT(m)/T/EWP(t)/EWP(b) IJP(c) JD/GG/WH

ACC NR: AT6002242 SOURCE CODE: UR/2564/65/006/000/0116/0121

AUTHOR: Izvekov, V. N.; Sysoyev, L. A.; Obukhovskiy, Ya. A.; Birman, B. I.

ORG: none

TITLE: Preparation of single crystals of refractory compounds from binary or multicomponent systems and effect of temperature conditions of growth on their form and faceting

SOURCE: AN SSSR. Institut kristallografii. Rost kristallov, v. 6, 1965, 116-121

TOPIC TAGS: single crystal growing, cadmium sulfide, aluminum oxide, tungstate, titanate, calcium compound, strontium compound, ruby, corundum

ABSTRACT: The authors studied the growth of cadmium sulfide single crystals from melts of cadmium chloride and iodide and their mixtures, and the growth of single crystals of (corundum (ruby), rutile, strontium titanate and calcium tungstate from fluorides. CdS single crystals with a wurtzite lattice were obtained in the 600 — 380C range from the CdS-$CdCl_2$-CdI_2 system. The other (oxide) crystals were grown in platinum crucibles in the 1200 — 700C range with slow cooling. An important feature revealed by these experiments is the dependence of the crystal habit of the crystals obtained on the temperature range of the crystallization. This phenomenon is explained by differences in the growth rates of faces having different crystallographical indices, particularly surface roughness. The concept of the influence of

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L 11879-66

ACC NR: AT6002242

surface roughness on the growth forms of crystals is extended to binary and multicomponent systems. Orig. art. has: 6 figures and 1 table.

SUB CODE: 20, 11 / SUBM DATE: none/ ORIG REF: 004/ OTH REF: 005

Card 2/2

L 13945-65 EWT(m)/ETC(f)/EPF(n)/T/EWP(t)/EWP(b) IJP(c) RPL/JD

ACC NR: AT6002259 (A) SOURCE CODE: UR/2564/65/006/000/0261/0266

AUTHOR: Bakradze, R.V.; Sysoyev, L.A.; Rayskin, E.K.; Konvisar, L.V.

ORG: none

TITLE: Possibility of obtaining homogeneous CdS-type single crystals of predetermined structure and orientation [Paper presented at the Third Conference on Crystal Growing held in Moscow from 18 to 25 November, 1963]

SOURCE: AN SSSR. Institut kristallografii. Rost kristallov, v. 6, 1965, 261-266

TOPIC TAGS: single crystal growing, cadmium sulfide, zinc sulfide, cadmium selenide, etched crystal

ABSTRACT: The paper describes an experimental study of the relationship between the polarity of the structure of $A^{II}B^{VI}$-type compounds with a wurtzite lattice and the growth of crystals of a predetermined orientation. The polarity of structure of CdS, CdSe, and ZnS hexagonal single crystals was studied by chemical etching, in which different etchants were selected for the different crystallographic planes. The characteristics of the etching process which were observed were due to the nature of the chemical

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L 15945-66

ACC NR: AT6002259

bonds, which cause an unlike distribution of the cations and anions in the various planes. The growth of CdS crystals in the direction of axis C_6 in the presence of excess cadmium in the melt was found to be faster than in any other direction. The anisotropy observed in the etching of the lateral faces of a CdS prism indicates the presence of growth polarity in a direction perpendicular to axis C_6. Use of a seed, taking into account its polarity along axis C_6, made it possible to achieve a reproducible growth of CdS single crystals (weighing over 100 g). Orig. art. has: 5 figures.

SUB CODE: 20 / SUBM DATE: none / ORIG REF: 004 / OTH REF: 006

FW

Card 2/2

L 35599-65 EWA(c)/EWT(m)/EWP(b)/T/EWP(t) [illegible]

ACCESSION NR: AP5[illegible] S/0363/65/001/001/0077/0079

24
23

AUTHOR: Kraynvukov, N. I.; Sysoyev, L. A.; Pantaler, R. P.; Kharchenko, L. N. B

TITLE: Purification of compounds of the type AII BVI from oxygen-containing impurities

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 1, 1965, 77-79

TOPIC TAGS: single crystal, crystal cultivation, zinc sulfide, cadmium sulfide, sulfate impurity

ABSTRACT: For growing single crystals of the type AIIBIV (ZnS, CdS, etc.), the dust obtained by either the "wet" or "dry" method, with 0.8 to 1.5% oxygen-containing compounds, is not sufficiently pure. A new method was therefore developed for producing the sulfides, namely, high-temperature heating of the metals in an atmosphere of pur hydrogen sulfide. Quartz ampoules, cleaned with nitric acid, washed 10-15 times with distilled water and dried in an oven at 100-120C, were loaded with 500g of the metal and placed into an oven. A stream of hydrogen sulfide at atmospheric pressure and a rate of 1-2 cc/sec. was passed [illegible] for [illegible] hours. Sulfates were extracted in water, and acid and basic sulfates in a buffered ammonia solution before determination. The

Card 1/2

L 35599-65

ACCESSION NR: AP5007610

content of oxygenated compounds in both ZnS and CdS was less than 0.0001%. Orig. art. has: 2 tables.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut monokristallov, khar'kov (All-union monocrystals scientific research institute)

SUBMITTED: 06Jul64 ENCL: 00 SUB CODE: IC, SS

NO REF SOV: 010 OTHER: 004

Card 2/2

L 27836-65 EWT(1)/T/EWP(k) Pf-4/Pi-4
ACCESSION NR: AP5005323 S/0181/65/007/002/0655/0656

AUTHOR: Astrov, D. N.; Baybakov, V. I.; Pado, G. S.; Synoyev, L. A.

TITLE: Amplification of longitudinal ultrasound waves in CdS single crystals

SOURCE: Fizika tverdogo tela, v. 7, no. 2, 1965, 655-656

TOPIC TAGS: cadmium sulfide crystal, ultrasound amplification, ultrasound wave, longitudinal wave

ABSTRACT: The amplification of acoustic waves in piezo-semiconductors, under given conditions, was confirmed experimentally by A. R. Hutson and others (Phys. Rev. Lett., 7, 237, 1961) for the case of a transverse ultrasonic wave in CdS crystals. The present article concerns an investigation of the above effect for a longitudinal wave. A delay line, similar to the one described by Hutson, was used. A photosensitive CdS single crystal specimen (5.5 x 5 x 8 mm^3) was fastened to two fused quartz glass shock absorbers, the intermediate layer between the two being indium foil. Quartz piezo-converters were glued to the outside ends of the absorbers. The specimen was oriented so as to permit propagation of the sound wave along the C_6 axis. The incandescent lamp used for illumination made it possible to vary crystal conductance in the range 10^{-8}—2 x 10^{-5} ohm^{-1} cm^{-1}. The coefficient of ab-

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L 27836-65
ACCESSION NR: AP5005323

sorption was shown to be a function of the strength of the electric field applied to the specimen (for a period of 5 μsec) during the transmission of the acoustic wave. The nature of the relationship is governed by the conductance of the specimen and agrees well with results obtained by Hutson for the transverse wave. Orig. art. has: 2 figures. [YK]

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut fizikotekhnicheskikh i radiotekhnicheskikh izmereniy, Mendeleyevo (All-Union Scientific Research Institute of Physicotechnical and Radiotechnical Measurements)

SUBMITTED: 12Sep64 ENCL: 00 SUB CODE: GP, SS

NO REF SOV: 001 OTHER: 004 ATD PRESS: 3193

1 Card 2/2

L 63344-65 EEC(b)-2/EWT(l)/EWT(m)/EWP(b)/T/EWP(t) Pi-4 IJP(c) GG/JD

ACCESSION NR: AP5017324 UR/0181/65/007/007/2215/2217

AUTHOR: Kalashnikov, S. G.; Morozov, A. I.; Stankovskiy, B. A.; Sysoyev, L. A.

TITLE: Effect of spectral composition of applied field on the amplification of ultrasound in cadmium sulfide

SOURCE: Fizika tverdogo tela, v. 7, no. 7, 1965, 2215-2217

TOPIC TAGS: cadmium sulfide, ultrasound amplification, photosensitive crystal

ABSTRACT: The authors investigate the amplification of ultrasound in photosensitive crystals of cadmium sulfide at frequencies 25, 30, and 75 Mcs. The purpose of the work was to check experimentally some theoretical results reported by D. L. White (J. Appl. Phys. v. 33, 2547, 1962) and to ascertain whether the observed amplification can be increased. The experimental procedure was analogous to that described by A. R. Hutson et al (Phys. Rev. Lett. v. 7, 237, 1961). The crystals were obtained from the melts under pressure by a method described by the authors earlier (FTT v. 4, 807, 1962). On the whole, plots of the attainable gain against the applied electric field agreed qualitatively with the thoery, the maximum gain at 75 Mcs amounting to 102 dB/cm. However, the absolute maximum gain or absorption of power, obtained for different crystals having the same electric conductivity, differed. In some crystals, the maximum gain was also greatly dependent on the spec-

Card 1/2

L 63344-65

ACCESSION NR: AP5017524

tral composition of the applied illumination. An analysis of the results shows that the differences in the maximum gain obtained in the different crystals are due to the difference in the concentrations of various traps in the crystal. It is concluded that for some crystals it is possible to increase greatly the gain of the ultrasound by suitably choosing the spectral composition of the pumping light. For example, the power gain at 25 Mcs could be amplified 100-fold with practically no change in the electric conductivity. Orig. art. has: 1 figure, 3 formulas, and 1 table. [02]

ASSOCIATION: Institut radiotekhniki i elektroniki AN SSSR, Moscow (Institute of Radio Engineering and Electronics, AN SSSR)

SUBMITTED: 10Feb65	ENCL: 00	SUB CODE:	SS, GP
NO REF SOV: 002	OTHER: 006	ATD PRESS:	4056

Card 2/2

L 15929-66

ACC NR: AP6004423 SOURCE CODE: UR/0051/66/020/001/0183/0184

AUTHOR: Bochkov, Yu. V.; Georgobiani, A. N.; Gershun, A. S.; Sysoyev, L. A.; Chilaya, G. S.

ORG: none

42
B

TITLE: Ultraviolet electroluminescence of zinc sulfide

SOURCE: Optika i spektroskopiya, v. 20, no. 1, 1966, 183-184

TOPIC TAGS: electroluminescence, zinc sulfide, single crystal, UV radiation

ABSTRACT: Ultraviolet electroluminescence was observed in pure single crystals of zinc sulfide grown from a melt under inert gas pressure. Specimens 150 μ thick were subjected to pulsed voltage with an amplitude of 4.5 kv, a duration of 1.7 μsec and a duty factor of $1.5 \cdot 10^4$. The voltage was applied through indium electrodes. The luminescence of the specimens is stable at a constant voltage and increases approximately exponentially with voltage. A voltage increase from 2.7 to 4.5 kv increases the luminescence intensity by approximately one order of magnitude. It is assumed that this luminescence is due to recombination of electron-hole pairs created by

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UDC: 535.376-3

L 15929-66

ACC NR: AP6004423

electric discharge in the crystal. There is a sharp cutoff in luminescence at 330 mμ due to the natural absorption of the crystal lattice. It is shown that this emission could not be caused by air breakdown in microcracks. Orig. art. has: 1 figure.

SUB CODE: 20/ SUBM DATE: 27Jul65/ ORIG REF: 001/ OTH REF: 000

Card 2/2

L 3977-66 EWT(m)/EWP(t) IJP(c) JD/JG-2
ACC NR: AP6013068 SOURCE CODE: UR/0048/66/030/004/0628/0632

AUTHOR: Bochkov,Yu.V.; Georgobiani, A.N.; Kisil',I.I.; Sysoyev,L.A.; Chilaya,G.S.

ORG: Physical Institute im. P.N.Lebedev, Academy of Sciences,SSSR (Fizicheskiy institut Akademii nauk SSSR)

TITLE: Electroluminescence of bulk ZnS crystals /Report, Fourteenth Conference on Luminescence held in Riga,16-23 September 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 4, 1966, 628-632

TOPIC TAGS: electroluminescence, zinc sulfide, semiconducting material, luminophor, single crystal, single crystal growth

ABSTRACT: The study was undertaken in view of the growing interest in II-VI semiconductors as representatives of the class of compounds with a broad forbidden band. Zinc sulfide belongs in this category and is the most thoroughly studied electroluminophor. However, most previous investigations of this electroluminophor did not satisfy the basic conditions for electric measurements on semiconductors: absence of surface effects and adequate uniformity of the specimens. For the present work the single crystals were grown from a melt in an inert gas by the Stockbarger technique; the crystallization was realized at 1850° C to insure growth of hexagonal specimens. A characteristic of the single crystals was pronounced cleavage along the (11$\bar{2}$0) planes; the single crystals were up to 30 mm in diameter and 100 mm long. Chemical analysis

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ACC NR: AP6013068

showed that the crystals contained the following impurities: Cu about 10^{-4}%, Ni about 5×10^{-6}%, Fe about 10^{-4}%, Mn about 5×10^{-6}%, SO_4^{2-} under 10^{-4}%, and oxides under 10^{-4}%. The specimen plates were prepared as follows: the crystals were first oriented with reference to the cleavage plane and then wafers measuring 3 x 3 mm and 2 mm thick were cut by means of a corundum disk. The wafers were etched in acid and provided with ohmic contacts to eliminate surface effects. In the experiments measures were taken to minimize heating; these consisted in providing good heat conduction and using short exciting pulses (1.7 microsec) and a very low duty factor. The electroluminescence peaks at about 460 mμ; the brightness is a linear function of the applied voltage. Further data are given on the ultraviolet electroluminescence spectrum of purer crystals. The experimental results are discussed in general terms; the emission is attributed to interband recombination. In conclusion, we desire to thank M.V.Fok for discussion of the results and valuable suggestions in the course of the work, V.K.Kostin for assistance in preparing the crystals, and A.N.Savin and G.G.Stolpovskiy for help in adjusting the electronic equipment. Orig. art. has: 4 figures.

SUB CODE: 20/ SUBM DATE: 00/ ORIG REF: 003/ OTH REF: 004

L 16931-66 EWT(l)/EWT(m)/T/EWP(t)/ETI IJP(c) JD

ACC NR: AP6015501 (N) SOURCE CODE: UR/0181/66/008/005/1633/1635

45
B

AUTHOR: Gershun, A. S.; Sysoyev, L. A.; Timan, B. L.

ORG: VNII of Single Crystals, Scintillation Materials and Super Pure Materials, Khar'kov (VNII monokristallov, stsintilyatsionnykh materialov i osobo chistykh veshchestv)

TITLE: Some properties of the volt-ampere characteristics of thin CdS single crystals with non-ohmic contacts

SOURCE: Fizika tverdogo tela, v. 8, no. 5, 1966, 1633-1635

TOPIC TAGS: cadmium sulfide, indium, electric hysteresis

ABSTRACT: X- and Z-cuts of CdS crystals 100 to 200 μ thick were prepared with In electrodes deposited on both sides of their surfaces in a vacuum of 10^{-5} mm Hg. The In contacts were deposited at (a) room temperature and (b) upon a crystal preheated to 300 degrees. The volt-ampere characteristic of Z-cuts prepared at room temperature showed a pronounced hysteresis. It appears that the external voltage is compensated by the internal emf generated in the In-CdS-In system under the influence of the applied electrical field. The X-cuts with In electrodes prepared at room temperature had a residual voltage; however, the generated inverse current is smaller by one order of magnitude. The difference in the behavior of the In contacts on surfaces of the X- and Z-cuts might be caused by the different crystallographic and chemical composition of the

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L 66931-65

ACC NR: AP6015501 0

specimens. The volt-ampere characteristics of the specimen with X-cut contacts prepared on a preheated crystal showed only an insignificant hysteresis, whereas with the Z--cut prepared in the same manner, the hysteresis was quite pronounced. The presence of hysteresis is related to the nonohmicity and to the inertial properties of the system. Orig. art. has: 1 figure.

SUB CODE: 20/ SUBM DATE: 14Sep65/ OTH REF: 003

awm

Card 2/2

L 44599-66 EWT(1)/EWT(m)/EEC(k)-2/T/EWP(k)/EWP(t)/ETI IJP(c) WG/JD/AT

ACC NR: AP6030950 SOURCE CODE: UR/0181/66/008/009/2547/2548

AUTHOR: Bogdankevich, O. V.; Zverev, M. M.; Pechenov, A. N.; Sysoyev, L. A.

ORG: Physics Institute im. P. N. Lebedev, AN SSSR, Moscow (Fizicheskiy institut AN SSSR)

TITLE: Recombination radiation of ZnS single crystals excited by fast electrons

SOURCE: Fizika tverdogo tela, v. 8, no. 9. 1966, 2547-2548

TOPIC TAGS: solid state laser, zinc sulfide, ultraviolet laser, recombination radiation, electron beam pumping, ELECTRON BEAM

ABSTRACT: Laser action was reported in electron-beam-pumped ZnS single crystals with a large forbidden gap. High-purity hexagonal ZnS specimens were soldered with indium to a copper heat sink kept at liquid N temperature (except in the case of some experiments conducted at room temperature). The electron beam was focused on the polished surface of the specimen at right angles to the two polished ends. The emission recorded by a ZMR-3 monochromator and an FEU-18A photomultiplier was observed in the direction perpendicular to the incident beam. Recombination radiation was observed in the ultraviolet region when ZnS was excited by a pulsed beam of 50-kv electrons at current densities up to 6 amp·cm^{-2}. At increased current densities (6 amp·cm^{-2} and up) and 80K, emission of a line (14 Å wide) at 3300 Å was predominant. The shapes of the light and current pulses were coincident, which would seem to indicate that the life-

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ACC NR: AP6030950

time of nonequilibrium carriers did not exceed 10^{-7} sec. A 3-Å displacement in the intensity maximum of the 3300-Å line in the long-wave direction was observed at increased current densities and was attributed to the overheating of specimens. Orig. art. has: 3 figures. [YK]

SUB CODE: 20/ SUBM DATE: 20Dec65/ ORIG REF: 003/ ATD PRESS: 5078

Card 2/2

ACC NR: AP7000004 SOURCE CODE: UR/0070/66/011/006/0933/0935

AUTHOR: Sysoyev, L. A.; Timan, B. L.; Gershun, A. S.; Rayskin, E. K.; Konvisar, L. V.; Komar', V. K.

ORG: All-Union Scientific Research Institute of Monocrystals, Scintillators and Extra Pure Chemical Materials (Vsesoyuznyy nauchno-issledovatel'skiy institut monokristallov, stsintillyatsionnykh materialov i osobo chistykh khimicheskikh veshchestv)

TITLE: Growing cadmium sulfide crystals for ultrasonics amplification

SOURCE: Kristallografiya, v. 11, no. 6, 1966, 933-935

TOPIC TAGS: single crystal growth, semiconductor single crystal, cadmium sulfide, ultrasonics amplification, photosensitivity, dark current, annealing, crystal orientation

ABSTRACT: Conditions were determined for growing CdS monocrystals with optimum properties for ultrasonic wave amplification. Equipment was designed for growing crystals from a melt under inert gas at several hundred atmospheres pressure, moving the container with the crystallizing material through a high temperature zone. The cadmium and sulfur to be used contained about 10^{-4}% oxygen and about 10^{-5}% of other impurities; cadmium was used in excess, and most of it was removed by zone purification. Dark resistance and photosensitivity were increased and thermal stresses in the monocrystal were removed by annealing in a bed of fine crystalline CdS powder

UDC: 548.52

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ACC NR: AP7000004

under H_2S at atmospheric pressure for 24 hours at 1323°K. After annealing the dark resistance was 5×10^{10} ohm. cm and could be changed by 10^5-10^6 times by illumination. The quality of the hexagonal CdS crystal of wurtzite structure grown parallel to the C_6 axis depends on its orientation with respect to the melt: surfaces terminating in Cd atoms lead to the desired monocrystal; S atoms result in defective polycrystals. Orientation can be determined by examination of the piezoelectric effect and the type of etch pits of the base planes (0001) and $(000\bar{1})$. Optimum growth was obtained with a temperature gradient of 3-5 degrees/mm at the crystallization front; crystal growth at 10-12 mm/hr. Examination of a CdS crystal grown under these conditions showed it was suitable for amplifying ultrasonic waves. It was established the increased noise level at maximum amplification was not associated with transmission of the ultrasonic waves through the crystal. Orig. art. has: 4 figures.

SUB CODE: 20/ SUBM DATE: 19Jul64/ ORIG REF: 001/ OTH REF: 003

Card 2/2

ACC NR: AP7004984 (A) SOURCE CODE: UR/0048/66/030/009/1500/1503

AUTHOR: Kisil', I.I.; Levshin,V.L.; Sysoyev,L.A.; Fridman,S.A.; Shchayenko,V.V.

ORG: none

TITLE: Preparation of rare earth activated zinc sulfide single crystals /Report, Fourteenth All-Union Conference on Luminescence (Crystal Phosphors) held at Riga, 16-23 Sept. 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no.9, 1966, 1500-1503

TOPIC TAGS: luminescent crystal, ~~single crystal~~, zinc sulfide, thulium, luminescence center, SINGLE CRYSTAL GROWING

ABSTRACT: The authors prepared thulium-activated zinc sulfide single crystals and studied their luminescence. The investigations were undertaken mainly to develop a technique for preparing rare earth activated zinc sulfide single crystal phosphors. Hexagonal zinc sulfide single crystals with lengths of up to 10 cm and diameters of up to 3 cm were grown in a graphite crucible at 1800° in an argon atmosphere at a pressure of 200 atm by the technique described elsewhere by L.A.Sysoyev and N.M. Kraynyukov (Fizika tverdogo tela, 4, 3, 807 (1962)). Crystals grown from a mix containing 0.01% of thulium by weight exhibited thulium luminescence only after heating in a stream of H_2S, which treatment produces zinc vacancies. Heating the crystals in a stream of NH_3, which does not produce zinc vacancies, did not give rise to thulium

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ACC NR: AP7004984

luminescence. The relative intensities of the three main thulium luminescence bands varied with variations in the wavelength of the stimulating radiation and in the duration of the H_2S treatment; from this it is concluded that there are two different kinds of thulium luminescence centers. By breaking a crystal that had been heated in H_2S for 1.5 hour it was found that uniform activation of the 0.5 mm thick crystal had been achieved. Single crystal ZnS:Tm phosphors were also produced by heating ZnS single crystals in the mixture that is usually employed for preparing ZnS:Tm powder phosphors. The luminescence spectrum of these crystals was practically identical with that of ZnS:Tm powder phosphors. Orig. art. has: 3 figures and 1 table.

SUB CODE: 20 SUBM DATE: none ORIG. REF: 002

Card 2/2

ACC NR: AP7008529 (A) SOURCE CODE: UR/0363/67/003/002/0390/0391

AUTHOR: Sysoyev, L. A.; Rayskin, E. K.; Gur'yev, V. R.

ORG: All-Union Scientific Research Institute of Single Crystals, Kharkov (Vsesoyuznyy nauchno-issledovatel'skiy institut monokristallov)

TITLE: Measurement of the melting points of zinc and cadmium sulfides, selenides and tellurides

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 3, no. 2, 1967, 390-391

TOPIC TAGS: zinc sulfide, cadmium selenide, cadmium sulfide, cadmium telluride, zinc compound, melting point

ABSTRACT: The authors checked earlier thermographic measurements of the melting and crystallization points of ZnS, ZnSe, ZnTe, CdS, CdSe and CdTe, using a tube compression furnace at pressures of 10-20 Mn/m^2 of argon. An EPP-09-1/10 multirange recording potentiometer with scales from 0 to 50 mV and a precision of 0.05% was employed. The melting points were determined to within ±10°C. Use of the refined data made it possible to grow high-quality single crystals from the melt. Measurement of the melting points of ZnSe, ZnTe and CdTe at different pressures shows only a slight rise of the melting point with increasing pressure and indicates that the specific volume of the materials decreases upon their crystallization. In conclusion, authors thank

Card 1/2 UDC: 537.311.33:536.421.1

ACC NR: AP7008529

V. M. Andreyev for providing various samples of starting materials. Orig. art. has: 1 table.

SUB CODE: 20/ 07/ SUBM DATE: 06Jun66/ ORIG REF: 003/ OTH REF: 004

111/

Card 2/2

POLYANYANTZ, I.N.; SYSOYEV, L.M.

Investigating the cementation of antimony and arsenic from alkali-sulfide solutions. Trudy Inst. met. i obog. AN Kazakh. SSR 8:57-64 '63 (MIRA 17:8)

POLYVYANNYY, I.R.; KYSOYEV, L.N.

Tellurium cementation out of alkali sulfide solutions by aluminum.
Trudy Inst.met.i obog. AN Kazakh.SSR 11:107-113 '64.
(MIRA 18:4)

POLYVYANNYY, I.R.; MILYUTINA, N.A.; SYSOYEV, L.N.

Separating tungsten and molybdenum in alkali sulfide solutions.
Trudy Inst. met. i obog. AN Kazakh. SSR 12:161-167 '65.
(MIRA 18:10)

S/274/63/000/002/001/019
A055/A126

AUTHOR: Sysoyev, L.P.

TITLE: Detection of signals depending nonlinearly on random parameters and estimation of the parameters of these signals

PERIODICAL: Referativnyy zhurnal, Radiotekhnika i Elektrosvyaz', no. 2, 1963, 6, abstract 2A19 (In collection "Avtomat. regulirovaniye i upr.", M., AN SSSR, 1962, 392 - 398)

TEXT: The problem of the detection of the signal and of the estimation of its parameters is solved by using canonical representations of random functions. Let us assume that the following random function is acting upon the input of the system:

$$Z(t) = \varphi(t, U_1, \ldots, U_n) + X(t),$$

where $\varphi(t, U_1, \ldots, U_n)$ is the given function of time and of the random quantities $U_1, \ldots, U_n$; $X(t)$ is the sum of the irregular part of the signal and of the interference. The random function to be reproduced looks as follows:

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Detection of signals depending nonlinearly on ....

$$W(s) = \Psi(s, U_1, \ldots, U_n) + Y(s),$$

where $\Psi(s, U_1, \ldots, U_n)$ is the result of the linear transformation of function $\varphi(t, U_1, \ldots, U_n)$; $Y(s)$ is the result of the same transformation of the irregular part of the signal. It is supposed that the vector random function $[X(t), Y(s)]$ is distributed normally and does not depend statistically on the vector $(U_1, \ldots, U_n)$; it is also supposed that the mathematical expectations of $X(t)$ and $Y(s)$ are equal to zero. The optimum operator A is found from the condition determining the minimum of the conditional mathematical expectation of a certain function of the useful signal and of its estimation:

$$M[r(W, AZ)/Z] = \min.$$

The general formulae are applied to the radar signal having the following form:

$$Z(t) = AS_\omega(t - \tau)\sin[(\omega_0 + \omega)(t - \tau)] + X(t),$$

where A is the amplitude, τ is the delay, and ω is the Doppler frequency variation. In estimating the delay, it is possible to take, as the real value of τ, the point of the maximum of the a posteriori density of probability $p_z(\tau)$, that usually coincides with the maximum of the function

S/274/63/000/002/001/019
A055/A126

Detection of signals depending nonlinearly on ....

$$\xi(t) = \int_T g(t, \tau) Z(t)\, dt.$$

There are 4 references.

V.R.

[Abstracter's note: Complete translation]

Card 3/3

L 9888-63 BDS/EEC-2/EED-2/EEO-2--AFETC/ASD/ESD-3--Pl-4/Pn-4
ACCESSION NR: AP3000468 S/0103/63/024/005/0649/0656 66

AUTHOR: Sysoyev, L. P. (Moscow)

TITLE: Detecting a random signal that arrives over a number of channels with independent noises 25

SOURCE: Avtomatika i telemekhnika, v. 24, no. 5, 1963, 649-656

TOPIC TAGS: signal-noise studies multichannel-signal detection

ABSTRACT: The detecting receiver based on the likelihood-ratio computation is considered as one of the best. The likelihood-ratio formula as developed by D. Middleton (On the Detection of Stochastic Signals in Additive Normal Noise, Trans. IRE PGIT, vol 3, no 2, June 1957) is used, and the correction matrices that enter the formula are prepared. An algorithm of optimal processing of m input random functions is determined, and several particular signal-noise cases are considered. It is pointed out that the probability of incorrect solutions approaches zero as the number of inputs increases infinitely. "In conclusion I thank Yu. F. Kichatov for his useful advices." Orig. art. has: 35 equations.

Card 1/2

SYSOYEV, L., inzhener.

Experience in utilizing remote-control level indicators on liquid ammonia separators. Khol.tekh.31 no.1:70-71 Ja-Mr '54. (MLRA 7:4)
(Refrigeration and refrigerating machinery)

SYSOYEV, L.

SYSOYEV, L., inzhener.

An ammonia pump gland of new design. Khol.tekh. 31 no.2:68 Ap-Je '54. (MLRA 7:7)
(Pipe fittings--Ammonia)

SYSOYEV, L., inzhener

Ammonia pump systems for large cold storage plants. Khol.tekh. 32 no.1:7-12 Ja-Mr '55. (MLRA 8:7)
(Refrigeration and refrigerating machinery)

SYSOYEV, L.P., inzhener.

Changing the system of ammonia piping and refrigerating apparatus of the chambers of the Leningrad Cold Storage Warehouse No.1. Trudy LTIKHP 11:149-153 '56. (MLRA 10:6)

1. Leningradskiy kholodil'nik No.1.
(Refrigeration and refrigerating machinery)
(Leningrad--Cold storage warehouses)

SYSOYEV, L., inzh.

Inclined stationary barrel conveyer. Khol.tekh. 35 no.6:60 N-D '58. (MIRA 12:1)
(Conveying machinery)

SOV/66-59-1-20/32

AUTHOR: Sysoyev, L. Engineer

TITLE: Improved System of Discharging Oil From Oil Collector in Refrigerating Installations (Uluchshennaya skhema vypuska masla iz maslosobirateley kholodil'noy ustanovki)

PERIODICAL: Kholodil'naya tekhnika, 1959, Nr 1, p 62 (USSR)

ABSTRACT: In the Leningrad Cold Storage Plant Nr 1 the system of discharging oil from the oil collector has been improved, in as much as the oil is directed to a regenerator, in which the oil is heated by a coil pipe, thereby causing remains of ammonia to evaporate, the vapors being withdrawn by a fan and a ventilation pipe. The heated oil is being discharged by a centrifugal pump as shown in the diagram of the installation. There is 1 diagram.

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14(1) SOV/66-59-2-3/31

AUTHOR: Sysoyev, L., Engineer

TITLE: On the Path of Technical Progress (Po puti tekhnicheskogo progressa)

PERIODICAL: Kholodil'naya tekhnika, 1959, Nr 2, pp 8-10 (USSR)

ABSTRACT: The Leningrad Port Refrigeration Warehouse Nr 1, put into operation in 1928, is the first cold storage plant which has been designed and constructed throughout by Soviet scientists and workmen. Famous specialists such as M.Ya.Stayerman and S.A. Birman, both Doctors of Technical Sciences, Professor V.I. Glagolev and Professor M.V. Tukhshnayd have participated in its designing. The article gives an historical account of the development of this establishment from its inception in 1928 to this date, as it stands to-day. The Nr 1 Leningrad Refrigeration Warehouse, having a capacity of 20,000 tons, ranks among the largest cold stores in the USSR. In addition to its functions as a center for import and export operations it also serves as a food distributing center for Leningrad grocery stores. The Warehouse is now equipped with the latest system of refrigeration. In view of the absence of a double-stage compression installation, nec-

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essary for the operation of a deep-freeze apparatus at an evaporation temperature of -35°C, an ammonium ejector designed by Professor I.S. Badylkes of VNIKhI (All-Union Scientific Research Institute of Chemistry) has been installed. Transportation inside the Refrigeration Warehouse is mechanized with 20 electric fork lifts, 13 electric cars and 3 elevators of 2- and 3-ton capacity. Leningradskiy tekhnologicheskiy institut kholodil'noy promyshlennosti (Leningrad Technological Institute of the Refrigeration Industry) has elaborated a project of remote measuring by means of thermistores and electronic bridges; another project concerns the automation of refrigerating installations in the Cold Stores Nr 1 and 2. Both projects are to be realized in 1959. There is 1 photo.

ASSOCIATION: Leningradskiy portovyy kholodil'nik Nr 1 (Leningrad Port Refrigeration Warehouse Nr 1)

SYSOYEV, L.P.

Experience in the operation of the Harbor Cold Storage Warehouse in Leningrad. Ser.III: Nov.mash., obor. i sred.avtomatiz. no.59: 82-85 '63. (MIRA 16:12)

1. Leningradskiy portovyy kholodil'nik.

SYSOYEV, Lazar' Parfenovich; CHUPAKHIN, N.M., retsenzent; KURYLEV, Ye.S., spets.red.; TSIPERSON, A.L., red.

[Maintenance of the compressors and apparatus of refrigerating plants] Obsluzhivanie kompressorov i apparatov kholodil'nykh ustanovok. Moskva, Pishchevaia promyshlennost', 1964. 70 p. (MIRA 17:10)

L 37100-66 EWT(d)/FSS-2 GD

ACC NR: AT6006209 (A,N) SOURCE CODE: UR/0000/65/000/000/0047/0055

61

B+1

AUTHOR: Sysoyev, L. P.

ORG: none

TITLE: Multichannel reception of signals which depend nonlinearly on random parameters

SOURCE: AN SSSR. Institut avtomatiki i telemekhaniki. Tekhnicheskaya kibernetika (Technical cybernetics). Moscow, Izd-vo Nauka, 1965, 47-55

TOPIC TAGS: random noise signal, signal reception, signal transmission, signal interference, multichannel communication

ABSTRACT: The author investigates problems in the evaluation of parameters and the detection of signals which depend nonlinearly on random parameters. The case studied is when these signals are received by the various inputs of a receiving system against a background of noise. If the noises at the various inputs are not related to a determined dependence, and the useful signals have certain common parameters, then a greater accuracy may be expected in the evaluation of these parameters than with the employment of only one signal. Orig. art. has: 50 formulas.

SUB CODE: 09, 17/ SUBM DATE: 05Nov65/ ORIG REF: 002

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L 2399-66 EWT(d)/FSS-2

ACCESSION NR: AP5022975 UR/0103/65/026/008/1357/1370
621.391.16

21
B

AUTHOR: Sysoyev, L. P. (Moscow)

TITLE: Detection of random signals received through several channels with mutually correlated noises

SOURCE: Avtomatika i telemekhanika, v. 26, no. 8, 1965, 1357-1370

TOPIC TAGS: signal noise separation, multichannel analyzer, multichannel communication, random noise signal, Gaussian distribution

ABSTRACT: The reception of useful signals over several channels is expedient if the noises within the various channels are not connected by deterministic relationships and the resulting receiver has an increased stability to interferences. In an earlier paper (Avtomatika i telemekhanika, v. XXIV, no. 5, 1963) the present author investigated detection for the case when the noises at the various inputs are fully independent. The present article studies the detection of random Gaussian signals entering simultaneously m inputs of a receiver on a background of correlated noises. It gives the derivation of the general formula for the optimum detection receiver, presents investigations of several special cases, and shows conditions

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ACCESSION NR: AP5022975

under which the optimum processing includes preliminary adding of input signals at identical instants of time. Orig. art. has: 90 formulas and 2 figures.

ASSOCIATION: None

SUBMITTED: 12Nov64 ENCL: 00 SUB CODE: EC

NO REF SOV: 002 OTHER: 001

Card 2/2

L 8884-66 EWT(d)/EWT(1)/FSS-2/T IJP(c) WR

ACC NR: AP5026953 SOURCE CODE: UR/0103/65/026/010/1709/1719

AUTHOR: Sysoyev, L.P. (Moscow) 44,55

ORG: none

TITLE: Evaluating the parameters of signals modulated by random processes

SOURCE: Avtomatika i telemekhanika, v. 26, no. 10, 1965, 1709-1719

TOPIC TAGS: random process, signal analysis, mathematic analysis

ABSTRACT: Evaluating the parameters of various signals is an important practical problem. Evaluation of delay and Doppler shift in the frequency of a radar signal is an example. In solving this type of problem, it is usually assumed that the useful signal is the totality of the known function of time and random parameters. However in reality, e.g., when a signal passes through an inhomogeneous medium, there may be both additive and multiplicative interference, i.e., the useful signals may be modulated by various random processes. The general form of this case is considered in this paper. It is assumed for greater generality that the useful signal contains an unmodulated component as well. The random input process is given as

$$Z(t)=\varphi_0(t,U)+\sum_{i=1}^{m}Y_i(t)\varphi_i(t,U)+X(t),$$

UDC 621.391.142

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ACC NR: AP5026953

where X(t) is a Gaussian random process, $Y_i(t)$ (i=1, 2, ..., m) is an m-dimensional random process with zero mathematical expectations, $\phi_0(t, U)$ and $\phi_i(t, U)$ (i = 1, 2, ..., m) are completely known functions of time t and random vector U with components $U_1, \ldots, U_M$. It is assumed that the vector U is independent of X(t) and $Y_i(t)$ and that these processes are independent of one another. The problem consists of constructing an a posteriori probability density for the vector U. Orig. art. has: 53 formulas.

SUB CODE: 09, 12 / SUBM DATE: 23Mar65 / ORIG REF: 004

Card 2/2 nda

SYSOYEV, M. [Sysoiev, M.]

We are expanding construction without using wooden elements.
Sil'.bud. 9 no.6:11-12 Je '59. (MIRA 12:9)

1. Golovniy inzhener-budivel'nik Dnipropetrov'skogo oblastnogo upravlennya radgospiv.
(Dnepropetrovsk Province--Farm buildings)

SYSOYEV, M.I. SYSOYEV, V.I., and SYSOYEV , YE. A.

Computation of Motors

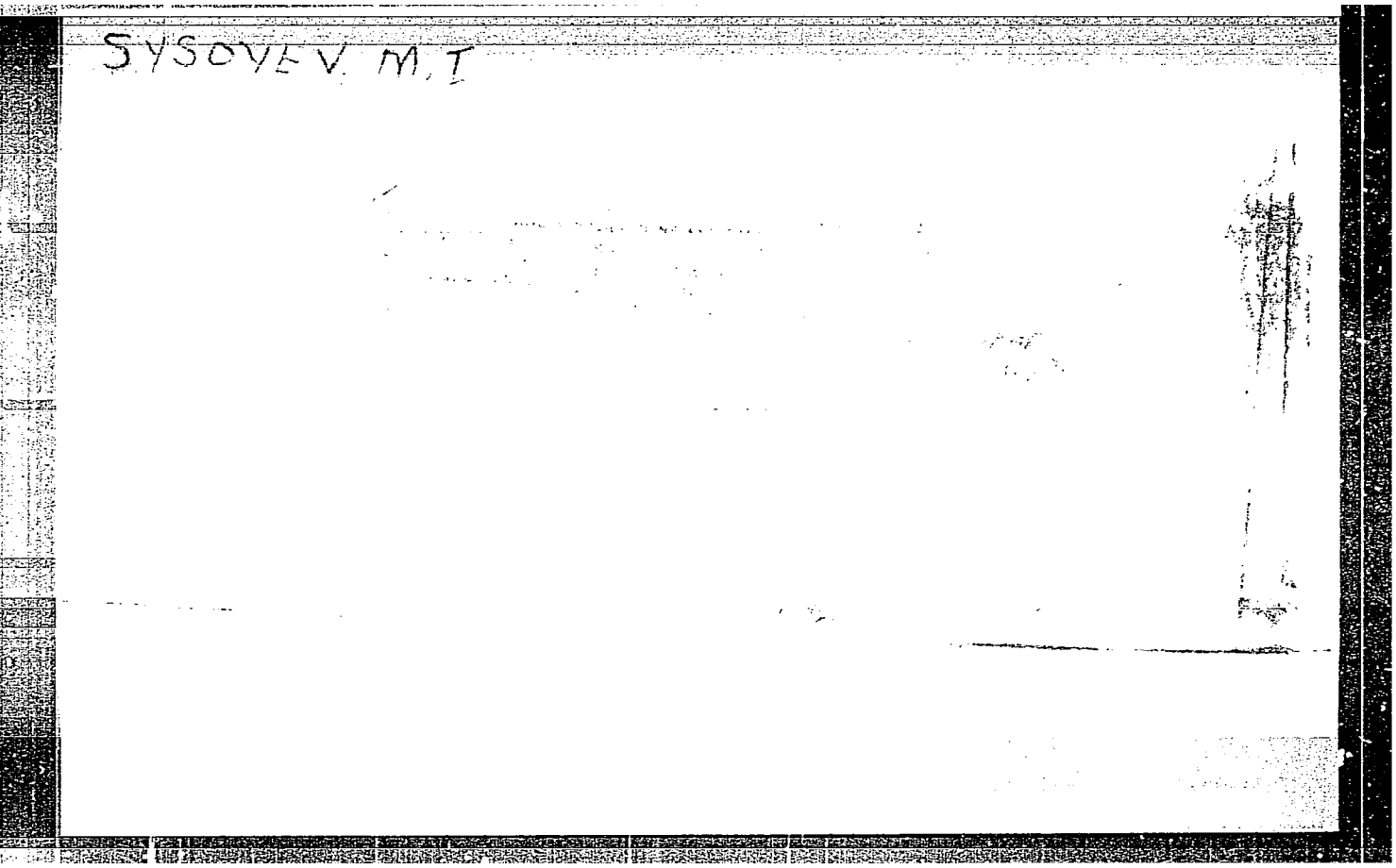
Leningrad Industrial IN-T (1940)

Sysoyev, M. I.

ALL-UNION ORDER OF LENIN ELECTRICAL ENGINEERING INST IMENI V. I. LENIN

SYSOYEV, M. I. -- "Air Spark-Over in a Heterogeneous Electrical Field." Sub 17 Jun 52, All-Union Order of Lenin Electrical Engineering Inst imeni V. I. Lenin (Dissertation for the Degree of Candidate in Technical Sciences)

SO: VECHERNAYA MOSKVA, JANUARY-DECEMBER 1952



SYSOYEV, M.I., kandidat tekhnicheskikh nauk.

On calculating the insulation of apparatus using compressed air. Elektrichestvo no.10:57-60 O '57. (MLRA 10:9)

1. Vsesoyuznyy elektrotekhnicheskiy institut imeni Lenina.
(Electric insulators and insulation)

SYSOYEV, M.I

AUTHOR: Sergeyev, A. S., Docent 105-58-4-27/37

TITLE: Dissertations (Dissertatsii)

PERIODICAL: Elektrichestvo, 1958, Nr 4, pp. 96-97 (USSR)

ABSTRACT: For the Degree of Candidate of Technical Sciences, 1956-1957.

1. At the All-Union Institute for Electrical Engineering imeni Lenin. (Vsesoyuznyy elektrotekhnicheskiy institut im. Lenina).

N. A. Neretina, on February 21, 1958: "Anode Range of Mercury Discharge". Official opponents were: Doctor of Physico-Mathematical Sciences Professor N. A. Kaptsev and Doctor of Physico-Mathematical Sciences Professor V. L. Granovskiy.

A. V. Rubchinskiy, on June 27, 1958: "Reconstitution of the Break-Down Resistance After Spark Discharge". Official opponents were: Doctor of Technical Sciences Professor L. I. Sirotinskiy, Doctor of Physico-Mathematical Sciences Professor S. P. Zhebrovskiy and Doctor of Technical Sciences Professor G. V. Spivak.

Card 1/4

M. I. Sysoyev, on June 17, 1952: "Break Down of Compressed Air in an Heterogenous Electric Field". Official opponents were: Doctor of Technical Sciences Professor B. M. Klyarfel'd, Doctor of Physico-Mathematical Sciences Docent V. A. Mikhaylov and Candidate of Technical Sciences Docent P. V. Borisoglebskiy.

G. A. Lebedev, on April 28, 1953: "Wet Discharge Voltages in Insulators". Official opponents were: Doctor of Technical Sciences Professor L. I. Sirotinskiy and Doctor of Technical Sciences Professor I. A. Syromyatnikov.

V. V. Afanas'yev, on May 11, 1954: "Construction of High-Voltage A. C. Disconnection Apparatus". Official opponents were: Doctor of Technical Sciences M. A. Babikov and Doctor of Technical Sciences Ye. M. Tseyrov.

2. At the Institute for Power Engineering imeni Krzhizhanovskiy AS USSR (Energeticheskiy institut im. Krzhizhanovskogo AN SSSR).

V. S. Lugovoy, on February 23, 1950: "Resonance Circuits With Loss Compensation for Checking the Resistivity of an Arc-Eliminating Apparatus". Official opponents were: Doctor of Technical Sciences Professor I. S. Stekol'nikov and Candidate of Technical Sciences Yu. G. Tolstov.

Yu. V. Skobel'tsyn, on October 26, 1950: "Rural Electric Power Stations in the Forest Zone of the European Part of the USSR as Shown by the Example of the Mariyc SSR". Official opponents were: Doctor of Technical Sciences A. G. Zakharin and Candidate of Technical Sciences N. A. Karaulov.

G. F. Kozlovskiy, on May 11, 1953: "Experimental and Theoretical Investigation of Ferromagnetic Gap-Filling Substances in Electromagnetic Mechanisms". Official opponents were: Doctor of Technical Sciences Professor A. N. Larionov and Doctor of Technical Sciences Professor Yu. G. Tolstov.

M. A. Bagirov, on September 17, 1953: "Experimental Investigation of Long Sparks". Official opponents were: Doctor of Physico-Mathematical Sciences Professor N. A. Kaptsov and Candidate of Technical Sciences S. T. Bondarenko.

O. V. Mamontov, on September 17, 1953: "Calculation of the Transient Processes in Complicated Linear Circuits by Means of the Fourier Integral". Official opponents were: Doctor of Technical Sciences Professor G. I. Atabekov and Candidate of Technical Sciences V. M. Matyukhin.

Dissertations 105-58-4-27/37

Sh. I. Lutidze, on April 29, 1954: "Investigation of the Electronic Excitation of Synchro-Generators According to the Scheme With Independent Excitation Using Buffer Valves". Official opponents were: Corresponding Member of the AS USSR A. N. Larionov and Candidate of Technical Sciences A. M. Utevskiy.

AVAILABLE: Library of Congress

1. Electrical engineering-Reports

Card 4/4

SOV/105-58-7-3/32

AUTHOR: Rysoyev, M. F., Candidate of Technical Sciences

TITLE: Measuring the Field Strength of an Electrostatic Field by the Auxiliary Electrode Method (Izmereniye napryazhennosti elektrostaticheskogo polya metodom vspomogatel'nogo elektroda)

PERIODICAL: Elektrichestvo, 1958, Nr 7, pp. 71-74 (USSR)

ABSTRACT: A new method of experimental field-investigation is described here (Ref 1, patent Nr 107 [illegible] by Rysoyev). If a high-voltage equipment is available, this method makes it possible to measure the field strength directly in complicated designs of insulation equipment in a rather simple way and shows in these cases advantages in comparison with the known methods (sounding method, or field-modeling in the electrolytic bath). An auxiliary electrode which is small in comparison to the basic electrodes is introduced at this point with the measurement of the field strength in any point of the investigated field according to the proposed method. It is advisable to use spherical surfaces, disks with rounded off edges, or semi-ellipsoids of steel, or high-melting metals as such

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auxiliary electrodes. - By gradually increasing the tension between the basic electrodes, a discharge occurs on the auxiliary electrode. This discharge terminates either with a breakdown between the basic electrodes and will exist in form of a corona. It is shown that the formation of this discharge may serve as an easily noticeable signal for attaining a certain field strength of the basic field. E_p at the place where the auxiliary electrode is located. E_p can easily be determined numerically by introducing the auxiliary electrode into a known field. Then the voltage U_p of the independent discharge taking place at this electrode is determined, from which the required field strength can be calculated according to formula (1). Furtheron it is shown that the field in the vicinity of an auxiliary electrode which was introduced into a relatively heterogeneous field differs very little from a field occurring when this electrode is introduced into a homogeneous field. - The influence of the degree of heterogeneity of the field on the accuracy of measurement is investigated. It is shown that the theoretically obtained data agree with those obtained experimentally.

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If $\Delta E = 25\ \%$, even the total error is substantially smaller than the value to be expected on the assumption that the error is determined by the quantity δ (error due to the field-heterogeneity) on the surface of the electrodes. A visible change of the basic field takes place when the auxiliary electrode approaches the basic electrode beyond a certain limit. The charges of the auxiliary electrode exert an influence on the charges of the basic electrode. Hence, a zone of prohibition exists within which a measurement by means of an auxiliary electrode is inadmissible. Within this zone the measurements must be carried out by means of auxiliary electrodes of different dimensions which are fixed (fastened) directly to the surface of the basic electrode. - The advantages of the method described here are as follows: 1) The auxiliary electrodes have no supply leads and 2) The effective field strength in the presence of solid dielectrics can be measured according to this method. - The disadvantage of this method consists in the fact that it does not permit to carry out any measurements in highly heterogeneous fields. -

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The accuracy of measurement of the strength of the electrostatic field amounts to ± 5 % according to this method. There are 3 figures and 4 references, 3 of which are Soviet.

ASSOCIATION: Vsesoyuznyy elektrotekhnicheskiy institut im. Lenina (All-Union Institute of Electrical Engineering imeni Lenin)

SUBMITTED: January 31, 1958

1. Electric fields--Measurement 2. Electrodes--Applications
3. Mathematics--Applications

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110-58-5-4/25

AUTHORS: Sysoyev, M.I., Candidate of Technical Sciences and Zakharov, I.N., Engineer.

TITLE: Electric Strength Control Tests on Switching Equipment with Compressed-air Insulation (O kontrol'nykh ispytaniyakh na elektricheskuyu prochnost' kommutatsionnykh apparatov s izolyatsiyey szhatym vozdukhom)

PERIODICAL: Vestnik Elektropromyshlennosti, 1958, Vol 29, Nr 5, pp 12 - 15 (USSR).

ABSTRACT: Compressed air is now used as the interrupting medium in a wide range of switching equipment, but there is not generally accepted procedure for making control tests on the medium. This article proposes a method based on electric-strength tests on experimental and production samples of shunting dischargers and various types of switches and isolators which use compressed air. Some special tests were also made. The electric strength of this type of insulation is not a single definite value but exhibits a normal statistical distribution. This is because when the air in the apparatus is changed, various contaminants enter the electrically-stressed parts and affect the insulation. Typical curves of probability of breakdown as a function of applied voltage for the case of

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an air-blast circuit-breaker are shown in Figure 1. In this case, the equipment was dismantled and cleaned before each test. The minimum breakdown voltages were about the same in circuit-breakers with multiple breaks and in those with a considerable number of operations, but they were more likely to occur in the first case than in the second. The distribution of the results is Gaussian as indicated by bold curves in Figure 1. The voltage distribution was not necessarily Gaussian in tests with multiple operations because successive breakdown test values are not independent of one another. As the number of operations increases, the air system and the spark gap expel contaminating particles. The latter are also burnt up by previous discharges. From the results given in Figure 1, it will be seen that as the value of the breakdown voltage from one test to another may vary by a factor of more than 1.5, a single breakdown test of compressed-air insulation is not reliable. It is better to make numerous tests, replacing the air in the equipment after each test, but this would take a lot of time. There is another way of improving the reliability of the

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results. Control tests are always preceded by type tests. The latter should always show that the minimum breakdown voltage of the insulation is above the test voltage and a special procedure should be used. Thereafter, control tests consist of checking clearances between contacts and contact shapes. For this purpose, it suffices to check the breakdown voltage in the clean condition at any pressure.
After some 40 or 50 breakdowns have removed mechanical contamination from the gap, a more or less stable breakdown voltage is obtained, as shown in Figure 2. This mean voltage is reproducible and derives from the electrode spacing and the shape of the electric field. An illustration of this is the results given in Figure 3. The test specimen on which they were obtained was one break of an air-blast isolator on an experimental 220-kV air circuit-breaker. After the isolator had been filled with air at a pressure of 9 atm., successive voltages were applied at intervals of one minute until breakdown occurred. The isolator was then dismantled and cleaned and the tests were repeated. Twelve tests of

 60 discharges each were made. It follows from Figure 3

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that the ratio between the maximum mean breakdown voltage in each of twelve tests and the corresponding minimum value decreases with the number of breakdowns that precede the ten on which the mean value was determined. Determination of the mean breakdown voltage becomes more precise as the pressure is reduced. Therefore, apparatus should be tested at the lowest pressure at which it is likely to operate. For example, air-blast isolators intended to operate at a pressure of 20 atm. may, when open, be at a pressure of only 8 atm. and this is the pressure at which the tests should be made. The tests should be on the apparatus as a whole and not on each separate break. Then, after electric spark treatment by 50 discharges, control tests at reduced pressure should show a mean discharge voltage for several breakdowns equal to that measured on the object that passed the type tests. This is a reliable indication that the insulation of the equipment being tested is the same as that of the equipment that passed the type test. There are 3 figures and 2 references, one of which is Soviet and 1 American.

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Electric Strength Control Tests on Switching Equipment with Compressed-air Insulation

ASSOCIATION: Vsesoyuznyy elektrotekhnickeskiy institut (All-Union Electro-technical Institute)

SUBMITTED: September 9, 1957

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64702

24.2120 SOV/109-4-8-22/35

AUTHORS: Granovskiy, V.L., Luk'yanov, S.Yu., Spivak, G.V. and Sivukhin, D.G.

TITLE: Report on the Second All-Union Conference on Gas Electronics

PERIODICAL: Radiotekhnika i elektronika, 1959, Vol 4, Nr 8, pp 1339 - 1358 (USSR)

ABSTRACT: The conference was organised by the Ac.Sc.USSR, the Ministry of Higher Education and Moscow State University. T.B. Fogelson - "Methods of Reducing the Energy Lost in the Formation of a Breakdown".
L.I. Pivovar and V.I. Gordiyenko - "Microdischarges and pre-breakdown Currents Between Metal Electrodes in High Vacuum".
V.A. Simonov and G.P. Katukov - "Investigation of the Processes of Initiation and Development of a High-voltage Discharge in Vacuum".
E.M. Reykhrudel and G.V. Smirnitskaya - "The Characteristics of Ignition in High-vacuum in Magnetic Fields".
L.V. Tarasova et al. dealt with the transfer of the electrode material during the pre-breakdown stage in vacuum.
N.D. Rozanov et al. - "The Motion of Micro-particles of Substances During Electric Breakdown in Vacuum".
The third section dealt with the problems of electric sparks, corona and their practical applications. It was presided over by I.S. Stekol'nikov. The following papers were read:
V.I. Lezitov et al. - "Probe Investigation of the a.c. Corona Fields".
G.N. Aleksandrov - "Elementary Processes in the Ionization Zone of Corona-type Conductors at Atmospheric Pressures".
I.A. Burmakin - "Appearance of a Corona Discharge in Hydrogen and Nitrogen".
P.N. Chistyakov et al. - "Some Properties of the Corona Discharge in Hydrogen in Coaxial, Cylindrical Systems".
A.S. Sobolev and B.N. Klyarfeld - "Appearance of Discharge Phenomena Between a Point and a Plane at Gas Pressures of 10^{-3} - 1.0 mm Hg".
Ya.Yu. Popat et al. - "Methods of Unipolar Ionisation of Air By Means of Aero-ioniers (see p 1333 of the journal).
M.P. Vanyukov et al. - "Time Spectra of the Radiation of a Spark Discharge in Inert Gases" (see p 1284 of the journal).
M.P. Vanyukov and A.A. Mak - "Production of High Temperatures by Means of Spark Discharges".
V.A. Peretyatin - "Influence of the Magnetic Field of the Electric Discharge on the Dividing Surface of Two Media".
I.S. Stekol'nikov - "New Data From the Study of Long Sparks".
N.I. Symonyk - "Properties of the Breakdown of Compressed Air in a Comparatively Uniform Field in the Presence of Localised Non-uniformities".
A.A. Vorob'yev et al. - "Pulse and Oscillographic Techniques for the Measurement of the Discharge Lags in Dielectrics" (see p 1357 of the journal).
A paper by B.N. Zolotykh dealt with the problem of the basic theory of the electric erosion (see p 1330 of the journal).
The fourth section was presided over by S.Yu. Luk'yanov and was concerned with the non-stationary and low-frequency discharges. The following papers were read:
I.G. Kaksenberich and A.A. Labud - "The Nature of the Current Interruption During the Electric Explosion of a Metal Wire".
V.A. Simonov - "Propagation of Plasma From Local Pulse Sources".
G.G. Timofeyev et al. - "Observation of an Electro-dynamically Compressed Arc By Means of an Electron-optical Converter".
M.S. Ioffe and Ya.Ye. Kushnarev - "Investigation of the Radial Electric Field in an Ion Magnetron".
V.A. Belyayev and N.K. Romanovskiy - "Experiments with an Electron Model of a System with Magnetic Samples".
A.M. Andrianov et al. "Distribution of Magnetic and Electric Fields in Powerful Pulse Discharges".
D.N. Harding (England) - "Spectroscopic Determination of the Plasma Temperature in the "Zeta" Equipment" (see p 1356 of the journal).
The paper by Harding aroused a lot of interest and Academician L.A. Artsimovich expressed the opinion that the electrons and ion temperatures in the "Zeta" should be of the same order; instead, according to Harding, the electron temperature is [illegible] of the order than that

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Dy Soyev, M.I.

SYSOYEV, M.I., kand.tekhn.nauk; BORIN, V.N., inzh.

Methodology for testing the internal insulation of pressurized apparatus. Vest. elektroprom. 33 no.8:50-55 Ag '62. (MIRA 15:7)
(Electric power distribution—Equipment and supplies)

SYSOYEV, M.I., kand.tekhn.nauk (Moskva)

Statistical method for determining the electrical strength of the insulation of air-filled apparatus. Elektrichestvo no.8:52-55 Ag '62. (MIRA 15:7)
(Electric power distribution--Equipment and supplies)

SYSOYEV, M.I., kand. tekhn. nauk

Prospects of using electron gas as insulation in high-voltage apparatus. Elektrotekhnika 34 no.10:19-22 O '63. (MIRA 16:11)

L 20974-65 EPA(s)-2/EWT(m)/EPF(c)/EWG(v)/EPR/EPA(w)-2/EWP(j)/EWP(t)/EWP(b)
Pc-4/Pe-5/Pab-10/Pr-4/Ps-4/Pt-10/Pa-4 AFWL/AEDC(a)/IJP(c) RM/WW/JD/JG
ACCESSION NR: AP5004053 S/0105/64/000/011/0046/0050

AUTHOR: Sysoyev, M. I. (Candidate of technical sciences) 15 B

TITLE: Problems of insulation and cooling of transformers with "elegas" (SF_6) gas

SOURCE: Elektrichestvo, no. 11, 1964, 46-50

TOPIC TAGS: electric transformer, cooling, electric insulation, gas, sulfur compound, fluoride

Abstract: In 1940 a group of Soviet scientists, headed by B. M. Gokhberg, began studying the use of stable gases for use in insulating and cooling power transformers. Sulfur hexafluoride (SF_6), a non-flammable gas, was found to have such superior insulation qualities that it was dubbed 'elegas' (electrical gas). As compared with air, a gap in either a homogeneous or inhomogeneous field insulated with SF_6 is 2.5 times more resistant to arcing. Alone, the gas is highly stable even up to 800°C, and begins to decompose slowly at temperatures of 180° and above only in the presence of certain metals and water. Its boiling point is -63.8°C, which is important for outdoor applications in view of the climatic conditions of the Soviet Union. Although SF_6 decomposes slowly in coronas

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and arcs into toxic products and compounds, this is not serious because they are effectively absorbed by aluminogel. Danger of pressure due to sparking in a transformer filled with SF_6 is less by a factor of 10 as compared with one filled with transformer oil, and therefore explosion and fire danger is also much less. Owing to the low mass of sulfur hexafluoride, transformers filled with this gas weigh 20 to 40% less than comparable oil-filled transformers. Detailed experiments were carried out with various spark gap configurations to test the insulating characteristics of SF_6 (e.g., point-plate, plate-plate, coaxial cylinders). Curves are shown for the insulation strength under various conditions, such as gap distance, gas pressure, and type of insulation. If ambient temperatures can drop below -50°C, 2 abatm pressure is maximum to avoid liquefaction of the insulating SF_6 gas. Small, light-weight x-ray transformers carrying 1000 and 2000 kw have been pressurized to 4 abatm. Factors involved in cooling and heat transfer in gas-insulated transformers are discussed and the elementary mathematical equations are derived for the rate of gas circulation. Orig. art. has 3 figures and 7 graphs.

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ACCESSION NR: AP5004053

ASSOCIATION: Vsesoyuznyy elektrotekhnicheskiy institut im. Lenina (All-Union Electrotechnical Institute)

SUBMITTED: 00	ENCL: 00	SUB CODE: EE
NO REF SOV: 003	OTHER: 005	JPRS

Card 3/3

SYSOYEV, M.I., kand.tekhn.nauk

Insulation and cooling of electron gas insulated transformers. Elektrichestvo no.11:46-50 N '64. (MIRA 18:2)

1. Vsesoyuznyy elektrotekhnicheskiy institut imeni Lenina.

SYSOYEV, N.; PILETSKIY, I.

State Bank business and people. Den.i kred. 18 no.11:39-43 N'60. (MIRA 13:11)

1. Zamestitel' upravlyayushchego Sverdlovskoy kontoroy Gosbanka (for Sysoyev). 2. Upravlyayushchiy Brestskoy kontoroy Gosbanka (for Piletskiy).
(Bank)

SENTYULEVA, A.; SYSOYEV, N.

The work of the UN Economic Commission for Europe must benefit the people. Vop. ekon. no.10:145-151 O '61. (MIRA 14:10)
(United Nations--Economic Commission for Europe)